

REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

The claims have been amended to clarify that the neutral control can be ended when a driver controlled element is substantially actuated, and also when the driver controller element is not substantially actuated if the torque transmitted to a frictional apply device has been continuously equal to or greater than a predetermined value for a consecutive period of time. Basis for the ending of the neutral control when the driver controlled element is substantially actuated is found in paragraph [0039], e.g., the accelerator pedal 42 is depressed. Support for ending the neutral control based on the transmitted torque being equal to or greater than a predetermined value for a consecutive period of time is found in Figure 5 at step SA11, based on a negative decision in step SA5.

The claimed invention is directed to a control apparatus or method which ends a neutral control which has been executed in a vehicle which is substantially stopped with a driver controlled element whose actuation indicates an intention of the driver to accelerate the vehicle, e.g., an accelerator pedal, substantially unactuated. According to a feature of the invention, the neutral control can be ended either when the driver controlled element is substantially actuated or, even if the driver controlled element is not substantially actuated, when a torque transmitted to a frictional apply device involved in the neutral control has been continually equal to, or greater than, a predetermined value for a consecutive period of time.

For example, referring to the non-limiting embodiment of Figure 5, if it is determined at step SA1 that the vehicle is currently executing a neutral control in which the torque through the first clutch C1 is reduced, it is then tested at step SA5 whether conditions for ending neutral control are fulfilled, for example, whether the accelerator pedal 42 is depressed. (Paragraph [0039]). If the accelerator pedal is depressed, control proceeds to step SA11 to end neutral control. However, even if the accelerator pedal is not depressed, neutral

control can be ended at step SA11 through the control steps SA6-SA10. More specifically, the transmitted torque  $tc1trq$  of the first clutch C1 is calculated at step SA7. If it is determined that the estimated torque  $tc1trq$  is equal to or greater than a predetermined reference value TRQTH (step SA8) the time count  $tentr$  is incremented at step SA9. If it is determined at step SA10 that the time count  $tentr$  is equal to or greater than a predetermined time TENTRED, control proceeds to step SA11 to end neutral control. Thus, neutral control is ended at step SA11, even if it is determined at step SA5 that the driver controlled element is not substantially actuated, so long as the torque transmitted to the frictional apply device C1 has been determined at step SA8 to be equal to or greater than a predetermined value TRQTH, and this has been determined at step SA10 to have been true for a consecutive period of time TENTRED.

Claims 1-4, 8-11 and 15 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. patent 4,775,938 (Hiramatsu). Although the dependent Claims 5-7 and 12-14 were indicated as being allowable is rewritten in independent form, Applicants respectfully submit that all of the claims as now amended define over the prior art.

Hiramatsu is directed to a vehicle having a neutral control in which the torque capacity of the clutch involved in the neutral control is controlled to provide a predetermined rotational speed difference. For example, referring to Figure 4 of Hiramatsu it is determined at step 52 whether the accelerator pedal is depressed as an indication that the driver intends to start the vehicle. If it is judged at step 52 that the accelerator pedal is not depressed, a desired rotation speed difference  $\Delta N'$  between the input and output shaft rotation speeds of the torque converter is determined at step 56, and the engaging force of the low reverse brake 24, which is involved in the neutral control, is controlled at steps 59-60 to maintain the actual rotation speed difference  $\Delta N$  equal to the desired rotation speed difference  $\Delta N'$ .

On the other hand, steps 61-68 of Figure 4 are performed only when it is determined at step 52 that the accelerator pedal has been depressed, indicating an intention on the part of the driver to start the vehicle and end neutral control. Specifically, if the result of the judgment at step 52 is positive, neutral control is ended in a process wherein the torque capacity of the low reverse brake 24 is increased while keeping the change rate  $\dot{N}_t$  of the rotation speed of the torque converter output shaft 19 at a reference changing rate  $\dot{N}_t'$ . To this end, the changing rate  $\dot{N}_t$  is computed at step 62, a reference changing rate  $\dot{N}_t'$  is computed at step 63, and the engaging force of the low reverse brake 24 is controlled at steps 65-66 based on a comparison of the changing rate  $\dot{N}_t$  with the reference changing rate  $\dot{N}_t'$  at step 64.

According to the outstanding rejection, Hiramatsu discloses ending neutral control when a torque transmitted to the low reverse brake (frictional apply device) 24 has been continually equal to or greater than a predetermined value for a consecutive predetermined time, based on the step 64 of Hiramatsu in which the torque transmitted by the low reverse brake is increased to end neutral control while maintaining the changing rate  $\dot{N}_t$  equal to a reference value. In this case, according to the Office Action, the predetermined time is the length of time necessary to perform the program steps 51, 52, 61-68.

However, the predetermined time upon which the Office Action has relied involves the ending of the neutral control *when the driver controlled element whose actuation indicates an intention of the driver to accelerate the vehicle*, i.e., the accelerator pedal, has been substantially actuated. In contradistinction, the present invention is directed to the ending of the neutral control *when the driver controlled element is not substantially actuated*. Since the claims now recite ending the neutral control when the driver controlled element is not substantially actuated, and since the engagement of the frictional apply device 24 at steps 61-68 in Hiramatsu is performed only when it is determined at step 52 that the accelerator

pedal has been depressed, Applicants respectfully submit that the amended claims clearly define over this reference.

The claims have been amended responsive to the objection of paragraph 2 in the Office Action.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

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